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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,602

Applicant(s)

OUMI ET AL.

Examiner

Aristotelis M. Psitos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 36-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/23/05 has been entered.

LOS of 2/24/06 + 9/16/04 have been made of record

Claim Rejections - 35 USC § 112

1. Claims 36-40, 53-68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The following analysis is made:

a) With respect to claim 1, it has now been amended to recite "only a single linear mark". No support for such a limitation is readily apparent/mapped to the specification as originally filed. All dependent claims thereon fall therewith.

b) Claims 53, 57, 61, 65 all recite the phrase "... projection having a linear edge". This phrase is not readily supported by the originally filed specification.

c) With respect to claims 54, 58, 62, 68 all recite the phrase "... groove having a linear edge formed in the medium." This phrase is not readily supported by the originally filed specification.

d) Claims 55, 59, 63 and 67 all recite the phrase "... plurality of substances having a linear interface and formed in a planar surface of the medium, the substances having different optical properties." This phrase is not readily supported by the originally filed specification.

The examiner respectfully requests applicants' cooperation in indicating where support for such phraseology/claimed limitations is found in the originally filed disclosure.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations as identified above in paragraph 1, a, b, c, and d must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 45-47,61-64 are objected to because of the following informalities:

As amended, independent claim 45, lines 16-17 do not read properly, i.e., "... one linear is orthogonal ...". Appropriate correction is required. Dependent claims suffer as well.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 36-38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-112075 further considered with Hajjar and all further considered with either Lemelson, or Morisawa et al.

The following analysis is made:

Claim 36	Jp 10-112075 & Hajjar
An information reproducing apparatus comprising:	See title/abstract/ and the MAT of the JP document
a light source for generating linearly polarized light;	see element 27 and parags 38- 45 for instance with respect to laser source 27
a medium having an information unit field and only a single linear mark disposed in	medium is present, see either Lemelson or Morisawa et al

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the information unit field;

an optical head disposed between the light source element 31
and the medium, the optical head having a fine aperture;

a polarized light control means for controlling the see description of
linearly polarized light generated by the light source to pass 40-46
through the fine aperture of the optical head to generate and Hajjar
near-field light having a preselected polarization direction
and to irradiate the linear mark in the information unit filed
of the medium with the near-
field light so that the preselected polarization direction of
the near-field light is orthogonal to a longitudinal axis of
the linear mark; and

a detector for detecting light scattered by the detector elements
linear mark irradiated with the near-field light. Present.

In the above analysis, the JP MAT (machine assisted translation) describes an optical medium and system for reproducing/recording information thereon providing for multi-values predicated upon orientation of the polarization direction of the incoming light beam. See the description of the MAT starting at paragraph 40 for instance. Furthermore, the use of the wave rotating plate is also found.

Hence the examiner concludes that the reference provides for the above noted elements with the exception of a clear depiction of a "near field" light. Although the reference uses appropriate optical elements to generate beam spots, there is no identification of such as being "near-field" beam.

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The Hajjar reference, teaches in this environment not only the polarization rotation, but also coupling such a capability with “near-field” optical elements in order to increase the recording density – see for instance the abstract.

It would have been obvious to modify the base system of JP 10-112075 with the above additional “near-field” ability, motivation is as discussed to increase the recording density of the record medium.

With respect to the newly inserted limitation that only a single linear mark is disposed in the information unit field, such limitations are well known and taught by either the Lemelson system, or alternatively by the Morisawa et al reference.

In particular, Lemelson – see figure 7, where the linear mark(s) are 78', 78 or 79, and the information unit field is each track 77. Hence only one linear mark is so disposed.

Alternatively, Morisawa et al – see the single mark(s) along the left hand edge of figure 5, wherein the unit image field is that area of the record associated therewith.

The capability/concept of having only a single linear mark is well known in the recording arts, i.e., commonly known as alignment marks, synch marks, edge marks, and are disposed with a unit information field.

It would have been obvious to modify the above references with such an additional capability, i.e., limiting the number of linear mark(s) to one, disposed in an information unit field for the ability of indicating/demarking each information unit.

With respect to claims 37 & 38 such an element is considered present in the overall combination of references, i.e., appropriate signal processing element for the inherent ability of processing the intensity of the reflected/detected signal.

With respect to claim 40, the marks are so use, in either of the secondary references to Lemelson or Morisawa et al.

3. Claims 41-43,45-47,49-51,53,57,61 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-112075 further considered with Hajjar considered with EP 0552887.

The following analysis is made:

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Claim 41

Jp 10-112075 & Hajjar

An information reproducing apparatus
comprising:

See title/abstract/ and
the MAT of the JP document

a light source for generating
linearly polarized light;

see element 27 and parag.s
38- 45 for instance with respect to
laser source 27

a medium having an information unit and
a plurality of linear marks disposed in the
information unit field and extending in
different directions from one another;

record and marks so taught
in the EP reference.

an optical head disposed between the light source
and the medium, the optical head having a fine aperture;

element 31

polarized light control means for controlling the
linearly polarized light generated by the light source to pass
through the fine aperture of the optical head to generate
near-field light having a preselected polarization direction
and to irradiate the linear marks disposed in the
information field of the medium with the near-
field light ; and

see description of
40-46
and Hajjar

a detector for detecting light scattered by the
linear mark irradiated with the near-field light.

detector elements
Present.

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In the above analysis, the JP MAT (machine assisted translation) describes an optical medium and system for reproducing/recording information thereon providing for multi-values predicated upon orientation of the polarization direction of the incoming light beam. See the description of the MAT starting at paragraph 40 for instance. Furthermore, the use of the wave rotating plate is also found.

Hence the examiner concludes that the reference provides for the above noted elements with the exception of a clear depiction of a "near field" light. Although the reference uses appropriate optical elements to generate beam spots, there is no identification of such as being "near-field" beam.

The Hajjar reference, teaches in this environment not only the polarization rotation, but also coupling such a capability with "near-field" optical elements in order to increase the recording density – see for instance the abstract.

It would have been obvious to modify the base system of JP 10-112075 with the above additional "near-field" ability, motivation is as discussed to increase the recording density of the record medium.

With respect to the newly inserted limitation with respect to the plurality of linear marks disposed in the information unit field and extending in different directions from one another – applicants' attention is drawn to EP 0552887 – which in figure 1 shows a plurality of linear marks in the data area/field, i.e., 7(Pb, Pa, Pc), note the different directional orientation of these marks. Furthermore, these are interpreted as being "projections".

The limitations of claim 45 closely parallel claim 41 and are met for the same analysis as stated above.

With respect to claims 42,46,50 such an element is considered present in the overall combination of references, i.e., appropriate signal processing element for the inherent ability of processing the intensity of the reflected/detected signal.

With respect claims 43,47 and 51 the information data is the data recorded.

The method limitations of claim 49 are met when the above system operates, are as the method limitations of claims 50 and 51.

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4. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 36-38 and 40 as stated in paragraph 2 above, and further in view of themselves.

This claim further defines the linear mark as a data mark. As noted/described in the base reference, up to 4 data marks are possible in a unit field. The examiner interprets this as describing a range of data marks, from none to 4, and hence either the references meet the claim, i.e., the value is within the range, or alternatively limiting the data mark to ONLY one is considered an obvious modification – see In re Peterson, 65 USPQ 2nd 1379.

5. Claims 44,48,52 are is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to the claims as stated in paragraph 3 above, and further in view of Albrecht et al.

Albrecht et al discloses in the recording arts, the ability of having a plurality of servo marks in various directions – see figures 4,5,6 and 9 and their description.

It would have been obvious to modify the base system as stated above with the additional teaching from this system, motivation is to permit the system to distinguish between the servo signal(s) and the data signals.

6. Claims 54,58,62 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims above, and further in view of Ohnuki et al.

The ability of having the marks as grooves/tracking grooves is considered taught by the Ohnuki et al document.

It would have been obvious to modify the base system as relied upon above with respect to claim 36, 41, 45, and 49 with the above additional teaching of having “grooves” / tracking grooves. Selection between pits, grooves for marks is considered merely a selection between alternative capabilities, i.e., a plurality of pits axial aligned is considered a groove.

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7. Claims 55,56,59,60,63-64,67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 36,41,45, and 49 as stated above, and further in view of Wickramasinghe et al.

As interpreted by the examiner, the newly cited Wickramasinghe et al teaches such limitations as part and parcel of the recording material in this environment.

It would have been obvious to modify the base system as relied upon above with respect to claims 36,43,45 and 49 with such a teaching, as being a selection of the materials for recording used in this environment, as selection of such is an selection between alternative materials.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hsieh et al, Gardner et al and Picard are cited as illustrative of alignment marks with various orientations and shapes in this environment.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection as stated above.

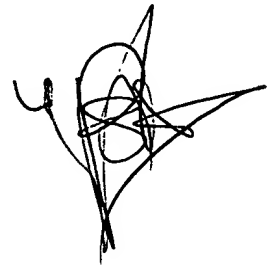
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M. Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-F: 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aristotelis M Psitos
Primary Examiner
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A handwritten signature in black ink, appearing to be 'A. Psitos', written over a circular stamp or seal.

AMP